Amendments to the Claims

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

1. (Canceled)
2. (Canceled)

3. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit that is configured to convert ~~converting~~ an optical signal that is received from any external source, to an electric signal;

a decoding circuit that is configured to decode ~~decoding~~ the electric signal ~~resultant from conversion~~ converted by said optical reception circuit and to judge ~~judging~~ whether or not the decoding is normally completed;

a reception light intensity level ~~judgement~~ judgment circuit that is configured to judge ~~judging~~ an intensity level of ~~received~~ light received from the external source based on the electric signal ~~from resultant from conversion by~~ said optical reception circuit;

a coding circuit that is configured to code data to be transmitted from the digital optical communication device; ~~coding transmission data;~~

an optical transmission circuit that is configured to convert the data coded by said codog circuit to an optical signal and to transmit same at a determined ~~to determine a~~ light emission intensity, the determined light emission intensity being based on ~~result of the judgement~~ the judgment by said reception light intensity level ~~judgement~~judgment circuit and ~~result of the~~

judgement the judgment by said decoding circuit; and to convert the transmission data coded by said coding circuit to an optical signal with the light emission intensity;

wherein the light emission intensity determined by said optical transmission circuit is one of a plurality of different light emission intensity values, determines the light emission intensity from a plurality of different light emission intensity values by referring to the intensity level judged by said reception light intensity level judgement circuit in the case where said decoding circuit judges that the decoding is normally completed;; where

wherein said plurality of different light emission intensity values each correspond to a different range of reception light intensities light intensity levels of received light; and

wherein the light emission intensity determined by said optical transmission circuit is determined determines the light emission intensity without referring to the intensity level judged by said reception light intensity level judgementjudgment circuit in the case where said decoding circuit judges that the decoding is not normally completed.

4. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit being configured to convert converting an optical signal that is received from any external source, to an electric signal;

a decoding circuit being configured to decode decoding the electric signal converted resultant from conversion by said optical reception circuit and to judge judging whether or not the decoding is normally completed;

a reception light intensity level judgementjudgment circuit being configured to judge

~~judging~~ an intensity level of ~~received~~ light received from the external source based on the electric signal ~~resultant from conversion by~~ said optical reception circuit;

a coding circuit being configured to code data to be transmitted by the digital optical communication device; ~~coding transmission data;~~

an optical transmission circuit being configured to convert the data coded by said coding circuit to an optical signal and to transmit same at a determined ~~determine a~~ light emission intensity, the determined light emission intensity being based ~~on result of the judgement the~~ judgment by said reception light intensity level ~~judgement~~judgment circuit and ~~result of the~~ judgement the judgment by said decoding circuit; ~~and to convert the transmission data coded by said coding circuit to an optical signal with the light emission intensity;~~

wherein the light emission intensity determined by said optical transmission circuit is one of a plurality of different light emission intensity values, ~~determines the light emission intensity from a plurality of different light emission intensity values,~~ where the plurality of different light emission intensity values each correspond to a different range of ~~reception light intensities~~ light intensity levels of received light;

an optical fiber connected to said optical transmission circuit; and

an optical fiber connected to said optical reception circuit.

5. (Canceled)
6. (Canceled)

7. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit that is configured to convert ~~converting~~ an optical signal being received from any external source, to an electric signal;

a decoding circuit that is configured to decode ~~decoding~~ the electric signal ~~resultant from conversion~~ converted by said optical reception circuit, ~~judging~~ to judge whether or not the decoding is normally completed, and ~~extracting~~ to extract reception light intensity information of a secondary station determined and transmitted by a primary station;

a coding circuit that is configured to code data to be transmitted by said digital optical communication device; ~~coding transmission data;~~

an optical transmission circuit being configured to determine a light emission intensity based on the reception light intensity information of the secondary station extracted by said decoding circuit, and to convert the ~~transmission~~ data coded by said coding circuit to an optical signal and to transmit same at a determined ~~with the~~ light emission intensity;

wherein the light emission intensity determined by said optical transmission circuit ~~determines the light emission intensity from~~ is one of a plurality of different light emission intensity values, where the plurality of different light emission intensity values each correspond to a different range of ~~reception~~ light intensities;

an optical fiber connected to said optical transmission circuit; and

an optical fiber connected to said optical reception circuit.

8. (Canceled)

9. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit ~~that converts converting~~ an optical signal received from any external source to an electric signal;

a decoding circuit ~~being configured to decode decoding~~ the electric signal ~~resultant from conversion converted~~ by said optical reception circuit and ~~to judge judging~~ whether or not the decoding is normally completed;

a reception light intensity level ~~judgement~~judgment circuit ~~being configured to judge judging~~ an intensity level of ~~received~~ light ~~being received~~ from a primary station based on the electric signal ~~resultant from conversion converted~~ by said optical reception circuit;

a coding circuit ~~being configured to generate generating~~ reception light intensity information ~~of the light being received from of~~ the primary station based on ~~result of~~ the ~~judgement~~judgment by said decoding circuit and ~~result of~~ the ~~judgement~~judgment by said reception light intensity level ~~judgement~~judgment circuit and ~~to code data coding transmission~~ data and said reception light intensity information ~~for transmission by the digital optical communication device; ;~~

~~_____~~wherein the reception light intensity information being generated ~~corresponds to is~~ one of a plurality of different light emission intensity values where the plurality of different light emission intensity values each correspond to a different range of light ~~intensities~~ intensity levels of light for the primary station;

an optical transmission circuit ~~being configured to convert converting~~ the reception light intensity information and the ~~data transmission data~~ coded by said coding circuit to an optical

signal;

wherein said coding circuit encodes said transmission data, said reception light intensity information of the primary station, and reception normal completion information judged by said decoding circuit, and

wherein said optical transmission circuit converts the transmission data, the reception light intensity information of the primary station, and the reception normal completion information coded by said coding circuit to the optical signal.

10. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit being configured to convert converting an optical signal received from any external source to an electric signal;

a decoding circuit being configured to decode decoding the electric signal resultant from conversion converted by said optical reception circuit and judging to judge whether or not the decoding is normally completed;

a reception light intensity level judgementjudgment circuit being configured to judge judging an intensity level of received light received from a primary station based on the electric signal resultant from conversion converted by said optical reception circuit;

a coding circuit configured to generate generating reception light intensity information of the primary station based on result of the judgementjudgment by said decoding circuit and result of the judgementjudgment by said reception light intensity level judgementjudgment circuit and to code coding transmission data to be transmitted by the digital optical communication device and

said reception light intensity information, wherein the reception light intensity information being generated ~~is~~ corresponds to one of a plurality of different light emission intensity values where the plurality of different light emission intensity values each correspond to a different range of light intensity levels ~~intensities~~ of light for the primary station;

an optical transmission circuit being configured to convert ~~converting~~ the reception light intensity information of the primary station and the ~~transmission~~ data coded by said coding circuit to an optical signal;

an optical fiber connected to said optical transmission circuit; and

an optical fiber connected to said optical reception circuit.

11. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit being configured to convert ~~converting~~ an optical signal received from any external source to an electric signal;

a decoding circuit configured to decode ~~decoding~~ the electric signal ~~resultant from conversion~~ converted by said optical reception circuit, to extract ~~extracting~~ a light emission intensity requested from a secondary station, and to judge ~~judging~~ whether or not the decoding is normally completed;

a reception light intensity level ~~judgement~~judgment circuit being configured to judge ~~judging a reception light~~ an intensity level of received light based on the electric signal ~~resultant from conversion~~ converted by said optical reception circuit;

a secondary station ~~request~~ light emission intensity control signal generation circuit that

~~generates~~ ~~generating~~ light emission intensity information requested to the secondary station based on result of ~~the judgement~~ the judgment by said decoding circuit and on the reception light intensity level judged by said reception light intensity level ~~judgement~~judgment circuit, wherein the reception light intensity information being generated is one of a plurality of different light emission intensity values where the plurality of different light emission intensity values each correspond to a different range of ~~light intensities~~ light levels of light of the secondary station;

a coding circuit coding ~~that codes transmission~~ data and the light emission intensity information ~~to be transmitted by requested to~~ the secondary station generated by said secondary station ~~request~~ light emission intensity control signal generation circuit; and

an optical transmission circuit ~~that converts converting~~ the ~~transmission~~ data and the light emission intensity information ~~requested to the secondary station that are~~ coded by said coding circuit with the light emission intensity ~~requested from the secondary station~~ that is extracted by said decoding circuit.

12. (Currently Amended) The digital optical communication device according to claim 11, wherein

said reception light intensity level ~~judgement~~judgment circuit judges the reception light intensity level based on the electric signal ~~resultant from conversion~~ converted by said optical reception circuit from the time at which said decoding circuit detects a start flag to the time at which said decoding circuit detects a stop flag.

13. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit being configured to convert ~~converting~~ an optical signal received from any external source to an electric signal;

a decoding circuit that decodes ~~decoding~~ the electric signal ~~resultant from conversion~~ converted by said optical reception circuit, that extracts ~~extracting~~ a light emission intensity requested from a secondary station, and that judges ~~judging~~ whether or not the decoding is normally completed;

a reception light intensity level ~~judgement~~judgment circuit that judges ~~judging~~ a reception light intensity level based on the electric signal ~~resultant from conversion~~ converted by said optical reception circuit;

a secondary station ~~request~~ light emission intensity control signal generation circuit that generates ~~gencrating~~ light emission intensity information requested to the secondary station based ~~on result of the judgement~~ the judgment by said decoding circuit and on the reception light intensity level judged by said reception light intensity level ~~judgement~~judgment circuit;

a coding circuit being configured to code data ~~coding transmission~~ data and the light emission intensity information ~~requested to the secondary station~~ generated by said secondary station ~~request~~ light emission intensity control signal generation circuit for transmission by the digital optical communication device; and

an optical transmission circuit being configured to convert ~~converting~~ the ~~transmission~~ data and the light emission intensity information ~~requested to the secondary station that are~~ coded by said coding circuit with the light emission intensity ~~requested from the secondary station that is~~

extracted by said decoding circuit;

wherein said reception light intensity level ~~judgement~~judgment circuit judges the reception light intensity level by measuring a pulse width of the electric signal ~~resultant from conversion~~ converted by said optical reception circuit.

14. (Original) The digital optical communication device according to claim 11, further comprising:

an optical fiber connected to said optical transmission circuit; and

an optical fiber connected to said optical reception circuit.

15. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit being configured to convert ~~converting~~ an optical signal received from any external source to an electric signal;

a decoding circuit being configured to decode ~~decoding~~ the electric signal ~~resultant from conversion~~ converted by said optical reception circuit, to extract ~~extracting~~ a ~~secondary station~~ light emission intensity information from a secondary station, and to judge ~~judging~~ whether or not the decoding is normally completed;

a reception light intensity level ~~judgement~~judgment circuit being configured to judge ~~judging~~ a reception light intensity level based on the electric signal ~~resultant from conversion~~ converted by said optical reception circuit,

a primary station light emission intensity control signal generation circuit configured to

~~determine determining~~ a light emission intensity of a primary station based on the secondary station light emission intensity information extracted by said decoding circuit, ~~based~~ on ~~result of the judgement~~ the judgment by said decoding circuit, and ~~based~~ on ~~result of the judgement~~ the judgment by said reception light intensity level ~~judgement~~judgment circuit;

wherein the light emission intensity determined by said primary station light emission intensity control signal generation circuit ~~is one of determines the light emission intensity from~~ a plurality of different light emission intensity values, where the plurality of different light emission intensity values each correspond to a different range of ~~reception light intensities~~ light intensity levels of light;

a coding circuit that is configured to code ~~coding transmission~~ data and information on the light emission intensity of the primary station determined by said primary station light emission intensity control signal generation circuit; and

an optical transmission circuit being configured to convert ~~converting the transmission~~ data and the light emission intensity information coded by said coding circuit to an optical signal with the light emission intensity determined by said primary station light emission intensity control signal generation circuit.

16. (Original) The digital optical communication device according to claim 15, further comprising:

an optical fiber connected to said optical transmission circuit; and

an optical fiber connected to said optical reception circuit.

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Currently Amended) A digital optical communication method comprising the steps of:

converting an optical signal received from any external source to an electric signal;

decoding said converted electric signal; ~~resultant from conversion;~~

_____extracting a light emission intensity requested from a secondary station, ~~and~~

_____judging whether or not the decoding is normally completed;

wherein the extracted light emission intensity requested from a secondary station corresponds to ~~is~~ one of a plurality of different light emission intensity values, where the plurality of different light emission intensity values each correspond to a different range of ~~reception~~ light ~~intensities~~ light intensity levels of light at the secondary station;

judging a reception light intensity level based on ~~the converted said~~ electric signal; ~~resultant from conversion;~~

generating light emission intensity information ~~requested to the secondary station~~ based on result of said judgement as to whether or not the decoding is normally completed and on said judged reception light intensity level;

coding ~~transmission~~ data to be transmitted and said generated light emission intensity information ~~requested to the secondary station~~; and

converting said coded ~~transmission~~ data and said coded light emission intensity information ~~requested to the secondary station~~ to an optical signal with said extracted light emission intensity. ~~requested from the secondary station.~~

21. (Canceled)

22. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit being configured to convert ~~converting~~ an optical signal received from any external source to an electric signal;

a decoding circuit being configured to decode ~~decoding~~ the electric signal ~~resultant from conversion~~ converted by said optical reception circuit and to judge ~~judging~~ whether or not the decoding is normally completed;

a reception light intensity level ~~judgement~~judgment circuit that judges ~~judging~~ an intensity level of ~~received~~ light being received based on the electric signal ~~resultant from conversion~~ converted by said optical reception circuit, wherein circuitry of the reception light intensity level judgment circuit ~~for judging an intensity level of received light~~ is configured so as to output one intensity level judgment signal from ~~of~~ a plurality of different intensity level judgment signals, said one intensity level judgment signal being representative of one determined light emission intensity;

a coding circuit that codes ~~coding transmission~~ data to be transmitted;

an optical transmission circuit that is configured to determine ~~determining~~ a light emission

intensity based on ~~result of the judgement~~ the judgment by said reception light intensity level ~~judgement~~judgment circuit and ~~result of the judgement~~ the judgment by said decoding circuit and ~~to convert converting~~ the ~~transmission~~ data coded by said coding circuit to an optical signal with the determined light emission intensity; and

wherein circuitry of the optical transmission circuit ~~for converting the transmission data to an optical signal having the light emission intensity~~ is configured so as to be capable of outputting optical signals having any one of a plurality of light emission intensities and wherein a specific one of the plurality of light emissions intensities is selected as said determined light emission intensity responsive to said one intensity level judgment signal.

23. (Currently Amended) The digital optical communication device according to claim 22, wherein

said reception light intensity level ~~judgement~~judgment circuit compares the electric signal resultant ~~from conversion converted~~ by said optical reception circuit with a plurality of reference voltages, and judges said intensity level of the received light based on result of the comparison.

24. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit ~~configured to convert converting~~ an optical signal received from any external source to an electric signal;

a decoding circuit ~~being configured to decode decoding~~ the electric signal ~~resultant from conversion converted~~ by said optical reception circuit, ~~to judge judging~~ whether or not the decoding

is normally completed, and to extract ~~extracting~~ reception light intensity information of a secondary station;

a coding circuit configured to code ~~coding transmission~~ data for transmission;

an optical transmission circuit being configured to determine ~~determining~~ a light emission intensity based on the reception light intensity information of the secondary station extracted by said decoding circuit, and to convert ~~converting~~ the ~~transmission~~ data coded by said coding circuit to an optical signal with the determined light emission intensity; and

wherein the determined the light emission intensity is selected from a plurality of different light emission intensity values, where the plurality of different light emission intensity values each correspond to a different range of light intensity levels of light reception ~~light intensities~~ at the secondary station.

25. (Currently Amended) The digital optical communication device according to claim 24, wherein

said decoding circuit decodes the electric signal ~~resultant from conversion~~ converted by said optical reception circuit and extracts the reception light intensity information and reception normal completion information of the secondary station, and

said optical transmission circuit determines the light emission intensity based on the reception light intensity information and the reception normal completion information of the secondary station that are extracted by said decoding circuit, and converts the ~~transmission~~ data coded by said coding circuit to the optical signal with the light emission intensity.

26. (Currently Amended) A digital optical communication device comprising:

an optical reception circuit being configured to convert ~~converting~~ an optical signal received from any external source to an electric signal;

a decoding circuit being configured to decode ~~decoding~~ the electric signal ~~resultant from conversion~~ converted by said optical reception circuit and to judge ~~judging~~ whether or not the decoding is normally completed;

a reception light intensity level ~~judgement~~judgment circuit configured to judge ~~judging~~ an intensity level of ~~received~~ light being received from a primary station based on the electric signal ~~resultant from conversion~~ converted by said optical reception circuit;

a coding circuit configured to generate ~~generating~~ reception light intensity information of a primary station based on ~~result of the judgement~~ the judgment by said decoding circuit and ~~result of the judgement~~ the judgment by said reception light intensity level ~~judgement~~judgment circuit and to code ~~coding transmission~~ data to be transmitted and said reception light intensity information of the primary station, wherein the reception light intensity information being generated corresponds to ~~is~~ one of a plurality of different light emission intensity values where the plurality of different light emission intensity values each correspond to a different range of ~~light intensities~~ light intensity levels of light for the primary station; and

an optical transmission circuit being configured to convert ~~converting~~ the reception light intensity information and the ~~transmission~~ data coded by said coding circuit to an optical signal.

27. (Currently Amended) A digital optical communication method comprising the steps of:

converting an optical signal received from any external source to an electric signal;

decoding said electric signal resultant from conversion and judging whether or not the decoding is normally completed;

judging an intensity level of received light based on said electric signal ~~resultant from conversion~~ and providing a specific one of a plurality of different intensity judgment signals, said specific one judgment signal being representative of one determined light emission intensity;

coding transmission data; ~~and~~

determining a light emission intensity based on said judged intensity level of the received light and on result of said ~~judgement~~judgment as to whether or not the decoding is normally completed; ~~and~~ ~~, and~~

converting said coded transmission data to an optical signal with the determined light emission intensity, wherein said converting includes selecting a specific one of a plurality of different light emission intensities as the determined light emission intensity based on said specific one intensity level judgment signal.

28. (Currently Amended) A digital optical communication method comprising the steps of:

converting an optical signal received from any external source to an electric signal;

decoding said electric signal, ~~resultant from conversion~~, judging whether or not the decoding is normally completed, and extracting reception light intensity information of a secondary station from the decoded electrical signal;

coding ~~transmission~~ data to be transmitted;

determining a light emission intensity based on said extracted reception light intensity information of the secondary station, and converting said coded ~~transmission~~ data to an optical signal with the determined light emission intensity; and

wherein the determined the light emission intensity is a selected one of ~~from~~ a plurality of different light emission intensity values, where the plurality of different light emission intensity values each correspond to a different range of reception light intensities of the secondary station.

29. (Currently Amended) A digital optical communication method comprising the steps of:

converting an optical signal received from any external source to an electric signal;

decoding said electric signal ~~resultant from conversion~~ and judging whether or not the decoding is normally completed;

judging an intensity level of ~~received~~ light received from a primary station based on said electric signal; ~~resultant from conversion;~~

generating reception light intensity information of ~~the a~~ primary station based on said judged intensity level ~~of the received light~~ and ~~on result of said judgement~~ the judgment as to whether or not the decoding is normally completed, and coding ~~transmission~~ data to be transmitted and said reception light intensity information, wherein the reception light intensity information being generated corresponds to ~~is~~ one of a plurality of different light emission intensity values where the plurality of different light emission intensity values each correspond to a different range of light intensities ~~of the secondary station~~; and

converting said coded reception light intensity information and said coded transmission data to an optical signal.

30. (Currently Amended) A digital optical communication method comprising the steps of:

converting an optical signal received from any external source to an electric signal;

decoding said electric signal, ~~resultant from conversion,~~ extracting a secondary station light emission intensity of optical signals from a primary station, and judging whether or not the decoding is normally completed;

judging a reception light intensity level of optical signals from the secondary station based on said electric signal; ~~resultant from conversion;~~

determining a light emission intensity of a primary station based on said extracted secondary station light emission intensity of the primary station optical signals, based on ~~result of~~ said ~~judgement~~judgment as to whether or not the decoding is normally completed, and based on said judged reception light intensity level for secondary station optical signals;

coding ~~transmission~~ data to be transmitted and information on said determined light emission intensity of the primary station; and

converting said coded ~~transmission~~ data and said coded light emission intensity information to an optical signal with said determined light emission intensity.

31. (Previously Presented) The digital optical communication method of claim 30, wherein said determining includes comparing the extracted secondary station light intensity with the judged

reception light intensity level.

32. (Previously Presented) The digital optical communication method of claim 30, wherein the determined the light emission intensity is selected from a plurality of different light emission intensity values.